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PROCESSING COMPLETED FOR L6
L7 17 DUP REM L6 (2 DUPLICATES REMOVED)

=> d cbib abs 1-17;s (electrical or visible) and (microorganism or virus?) and (tissue or cells)

L7 ANSWER 1 OF 17 CAPLUS COPYRIGHT 1999 ACS
1998:317334 Impedance magnetic resonance imaging: A method for imaging of impedance distributions based on magnetic resonance imaging. Ueno, S.; Iriguchi, N. (Graduate School of Medicine, Department of Biomedical Engineering, University of Tokyo, 7-3-1 Hongo, Tokyo, 113, Japan). J. Appl. Phys., 83(11, Pt. 2), 6450-6452 (English) 1998. CODEN: JAPIAU. ISSN: 0021-8979. Publisher: American Institute of Physics.
AB Magnetic resonance imaging (MRI) techniques have become important tools in **medicine** and biol. Conventional MRI, however, produces no information about the **elec. properties** of the body. This article proposes a new and noninvasive method for imaging **elec. properties** such as cond. and impedance based on MRI techniques. The basic idea is to use the shielding effects of induced eddy currents in the body on spin precession. Two types of methods are introduced; (i) a large flip angle method, and (ii) a third coil method. The large flip angle method enhances the shielding effects of conducting

tissues at the given Larmor frequency. The third coil method detects the shielding effects of conducting **tissues** at an arbitrary frequency. Both phantom and animal expts. have been carried out to verify this concept using a MRI system of 7.05 T with a bore size of 183 mm in diam.

L7 ANSWER 2 OF 17 CAPLUS COPYRIGHT 1999 ACS DUPLICATE 1

1998:468538 Document No. 129:200035 Monitoring of damage to skeletal muscle **tissues** caused by ischemia. Schafer, M.; Schlegel, C.; Kirlum, H. J.; Gersing, E.; Gebhard, M. M. (Department of Experimental Surger, University of Heidelberg, Heidelberg, D-69120, Germany). Bioelectrochem. Bioenerg., 45(2), 151-155 (English) 1998. CODEN: BEBEBP. ISSN: 0302-4598. Publisher: Elsevier Science S.A..

AB In **medicine**, for example during a transplantation, there is a great interest in noninvasive working methods for measuring organ states under the influence of ischemia. Elec. impedance spectroscopy measurements in the frequency range of 100 Hz to 10 MHz were performed on ischemic skeletal muscle **tissues** of rabbits at 5.degree.C. The measured alterations of the **elec. properties** of the ischemic skeletal muscles were explained with the help of a suitably extended model. Besides the known effects of edema and changes in cond. of the intra- and extracellular medium for ischemic organs in general, the model for skeletal muscle has to be extended by the consideration of the membrane resistance. Between 300-850 min the real part of the macroscopical elec. impedance of skeletal muscle decreases during ischemia at frequencies below I kHz. This effect is explained by the model as a result of the redn. of the membrane resistance caused by the opening of membrane channels. If further investigations would show a correlation between the transition from reversible to irreversible damage on the one hand, and the opening of membrane channels caused by ischemia on the other hand, then elec. impedance spectroscopy would be a noninvasive, easily applicable method to measure the skeletal muscle state during ischemia.

L7 ANSWER 3 OF 17 EMBASE COPYRIGHT 1999 ELSEVIER SCI. B.V.

97189740 EMBASE Bioelectrical impedance techniques in **medicine** Part I: Bioimpedance measurement second section: Impedance spectrometry. Rigaud B.; Morucci J.-P.; Chauveau N.. B. Rigaud, INSERM U305, RTITB, Centre Hospitalier Hotel Dieu, 31052 Toulouse Cedex, France. Critical Reviews in Biomedical Engineering 24/4-6 (257-351) 1997.

Refs: 234.

ISSN: 0278-940X. CODEN: CRBEDR. Pub. Country: United States. Language: English. Summary Language: English.

AB Electrical impedance spectrometry is an important application field of bioimpedance measurements. After introducing the **electrical properties** of biological **tissues**, this part presents instrumental aspects and applications of electrical impedance spectrometry. The main instrumental constraints encountered in spectrometric electrical impedance measurements are reviewed, focusing on low-frequency applications. Examples of impedance **cells** and probes are presented and several instrumental setups operating in the frequency and time domain are described. Some examples of applications are presented, including in vitro characterization and modeling of normal **tissues**, in vitro and in vivo characterization of cancerous **tissues**, and assessment of tissue perfusion/ischemia levels.

L7 ANSWER 4 OF 17 MEDLINE
97340385 Document Number: 97340385. Bioelectrical impedance techniques in **medicine**. Part I: Bioimpedance measurement. Second section: impedance spectrometry. Rigaud B; Morucci J P; Chauveau N. (Institut National de la Sante et de la Recherche Medicale-INSERM U305, Centre Hospitalier Hotel Dieu, Toulouse, France.)CRITICAL REVIEWS IN BIOMEDICAL ENGINEERING, (1996) 24 (4-6) 257-351. Ref: 234. Journal code: DSY. ISSN: 0278-940X. Pub. country: United States. Language: English.

AB Electrical impedance spectrometry is an important application field of bioimpedance measurements. After introducing the **electrical properties** of biological **tissues**, this part presents instrumental aspects and applications of electrical impedance spectrometry. The main instrumental constraints encountered in spectrometric electrical impedance measurements are reviewed, focusing on low-frequency applications. Examples of impedance **cells** and probes are presented and several instrumental setups operating in the frequency and time domain are described. Some examples of applications are presented, including in vitro characterization and modeling of normal **tissues**, in vitro and in vivo characterization of cancerous **tissues**, and assessment of tissue perfusion/ischemia levels.

L7 ANSWER 5 OF 17 BIOSIS COPYRIGHT 1999 BIOSIS
1996:438956 Document No.: PREV199699152562. Human monocyte morphology is affected by local substrate charge heterogeneity. Kapur, Ravi (1); Lilien, Jack; Picciolo, Grace Lee; Black, Jonathan. (1) Cent. Biomolecular Science Engineering, Naval Res. Lab., Code 6900, Washington, DC 20375-5348 USA. Journal of Biomedical Materials Research, (1996) Vol. 32, No. 1, pp. 133-142. ISSN: 0021-9304. Language: English.

AB **Cells** are sensitive to topological, chemical, and **electrical properties** of substrates on which they are grown. However, most studies of cell-surface interactions have neglected electrical effects or confounded them with other substrate properties. The use of nanofabrication technology has made it possible to fabricate optically transparent surfaces with controlled chemistry and topology, and with active, controllable surface charge density in domains as small as 1-4 mu-m. Human monocytes incubated on polystyrene with 3.3 mu-m-wide strip domains, alternately charged so as to maintain overall charge neutrality, show significant charge density and time-dependent increases (greater than twofold) in cell area and cell perimeter after challenge with a phagocytic trigger (human IgG opsonized zymosan particles). Additional ultrastructural studies on silicon dioxide substrates show charge-density-dependent qualitative morphological differences. These studies clearly demonstrate that human monocytes respond in vitro to local surface-charge heterogeneity in the absence of substrate topology and compositional variation.

L7 ANSWER 6 OF 17 BIOSIS COPYRIGHT 1999 BIOSIS
1995:160929 Document No.: PREV199598175229. Ceruloplasmin: An endogenous depolarizing factor in neurons. Wang, Rui (1); Zhang, Liming; Mateescu, Mircea Alexandru; Nadeau, Reginald. (1) Dep. Physiol., Univ. Montreal, C.P. 6128, Succ. Centre-Ville, Montreal, PQ H3C 3J7 Canada. Biochemical and Biophysical Research Communications, (1995) Vol. 207, No. 2, pp. 599-605. ISSN: 0006-291X. Language: English.

AB The biological effects of ceruloplasmin have been exclusively ascribed to its roles as a copper carrier and an antioxidant. Although neuronal

involvement of ceruloplasmin is closely related to aging and certain neuronal disorders, neuronal effects of ceruloplasmin are unknown and the possible modulation of membrane potential and ion channels by ceruloplasmin has not been investigated. In the present study, the membrane **electrical properties** of neuroblastoma **cells** in the presence of ceruloplasmin were studied using the patch-clamp technique. Ceruloplasmin induced a rapid and sustained membrane depolarization. This capacity of ceruloplasmin was abolished either when the copper was removed from ceruloplasmin or when ceruloplasmin was heat-inactivated. The depolarizing effect of ceruloplasmin was not due to an enhanced Ca-2+ or Na+ influx but it seemed to result from a reduced K+ efflux since ceruloplasmin significantly inhibited a TEA-sensitive delayed rectifier K+ channel. To our knowledge, this is the first report which indicates that ceruloplasmin is an endogenous neuronal depolarizing factor.

L7 ANSWER 7 OF 17 BIOSIS COPYRIGHT 1999 BIOSIS
1995:542715 Document No.: PREV199598557015. Anion secretion drives fluid secretion by monolayers of cultured human polycystic **cells**.
Mangoo-Karim, Roberto; Ye, Min; Wallace, Darren P.; Grantham, Jared J.; Sullivan, Lawrence P. (1). (1) Dep. Physiol., Univ. Kansas Med. Cent., 3901 Rainbow Blvd., Kansas City, KS 66160-7401 USA. American Journal of Physiology, (1995) Vol. 269, No. 3 PART 2, pp. F381-F388. ISSN: 0002-9513.
Language: English.

AB We have investigated the hypothesis that active anion transport drives fluid secretion by the cystic epithelium in autosomal dominant polycystic kidney disease (ADPKD). We prepared monolayers of a primary culture derived from cystic tissue removed from ADPKD patients. The monolayers were grown on permeant supports, and fluid secretion was initiated by forskolin. The results were compared with those obtained with monolayers of Madin-Darby canine kidney (MDCK) **cells**, known to secrete Cl-. In the absence of the agonist, ADPKD monolayers absorbed fluid (0.20 +- 0.02 mu-l cntdot cm surface area-2 cntdot h-1). Forskolin reversed this to secretion (0.60 +- 0.03 mu-l cntdot cm-2 cntdot h-1). Control MDCK monolayers did not transport fluid in either direction, but forskolin induced secretion (0.48 +- 0.03 mu-l cntdot cm-2 cntdot h-1). The **electrical properties** of the monolayers were monitored in Ussing chambers. Forskolin increased the transepithelial potential difference (V-te) of ADPKD monolayers (-0.9 +- 0.1 to -1.1 +- 0.1 mV) and the short-circuit current (I-sc) (6.6 +- 0.7 to 9.2 +- 0.8 mu-A/cm-2). The transepithelial resistance (R-te) fell (156 +- 9 to 138 +- 10 OMEGA cntdot cm-2). similar results were obtained with MDCK monolayers. The polarity of V-te and the direction of the I-sc are compatible with the hypothesis that active secretion of anion drives fluid secretion. Basolateral application of the Na-K-2Cl cotransporter, bumetanide, reduced forskolin-stimulated fluid secretion by ADPKD monolayers (0.56 +- 0.05 to 0.28 +- 0.03), depolarized V-te, and inhibited I-sc without affecting R-te. Apical application of the Cl- channel blocker, diphenylamine-2-carboxylate, also inhibited fluid secretion by ADPKD monolayers (0.65 +- 0.03 to 0.27 +- 0.02 mu-l cntdot cm-2 cntdot h-1). It also depolarized V-te and decreased I-sc. The two inhibitors exerted similar effects on MDCK monolayers. These results substantiate the hypothesis that active transepithelial transport of anion may drive fluid secretion into ADPKD cysts.

L7 ANSWER 8 OF 17 BIOSIS COPYRIGHT 1999 BIOSIS
1995:159331 Document No.: PREV199598173631. A 50 Hz sinusoidal magnetic field induces changes in the membrane **electrical properties** of K562 leukaemic **cells**. Santini, Maria Teresa (1); Cametti, Cesare; Paradisi, Silvia; Straface, Elisabetta; Donelli, Gianfranco; Indovina, Pietro Luigi; Malorni, Walter. (1) Lab. Ultrastrutture, Ist. Superiore Sanita, Viale Regina Elena 299, 00161 Rome Italy. Bioelectrochemistry and Bioenergetics, (1995) Vol. 36, No. 1, pp. 39-45. ISSN: 0302-4598. Language: English.
AB The cell membrane appears to be one of the major targets of extremely low frequency (ELF) magnetic fields. To determine whether the membrane **electrical properties** of K562 leukaemic **cells** can be affected by ELF fields, these **cells** were exposed to a sinusoidal 50 Hz 2.5 mT magnetic field for 48 h. It should be recalled that the field intensity used is three or four orders of magnitude greater than the values found in homes and in many workplaces. Analyses of dielectric relaxation measurements in the r.f. range demonstrate that both the membrane electrical conductivity and permitivity of K562 **cells** decrease considerably after exposure of these **cells** to ELF fields, whereas the conductivity of the cytosol does not vary. Since both membrane conductivity (a measure of the dynamic ionic movement across cell membranes) and membrane permitivity (an indicator of the ionic charges present on cell membranes) vary, these data seem to suggest that exposure of K562 leukaemic **cells** to ELF fields affects both static and dynamic properties of these **cells**.

L7 ANSWER 9 OF 17 MEDLINE
96048624 Document Number: 96048624. Tissue impedance: a historical overview.
McAdams E T; Jossinet J. (Northern Ireland Bio-Engineering Centre, University of Ulster at Jordanstown, UK.)PHYSIOLOGICAL MEASUREMENT, (1995 Aug) 16 (3 Suppl A) A1-13. Journal code: BN5. ISSN: 0967-3334. Pub. country: ENGLAND: United Kingdom. Language: English.
AB Over the past 150 years the study of the **electrical properties** of various biological **tissues** has been undertaken by researchers from a wide variety of scientific backgrounds. This has, unfortunately, led to the existing range of confusing and misunderstood terminology/concepts. Some of the most important are presented and explained.

L7 ANSWER 10 OF 17 BIOSIS COPYRIGHT 1999 BIOSIS
1995:37416 Document No.: PREV199598051716. Fast sodium currents induced by serum in human uterine leiomyosarcoma **cells**. Kusaka, Masumi (1); Sperelakis, Nicholas. (1) Dep. Mol. Cellular Physiol., Coll. Medicine, Univ. Cincinnati, PO Box 670576, Cincinnati, OH 45267-0576 USA. American Journal of Physiology, (1994) Vol. 267, No. 5 PART 1, pp. C1288-C1294. ISSN: 0002-9513. Language: English.
AB We previously demonstrated that fast Na+ channels are expressed in uterine smooth muscle **cells** during pregnancy (Y. Ohya, and N. Sperelakis. Am. J. Physiol. 257 (Cell Physiol. 26): C408-C412, 1989; Y. Inoue, and N. Sperelakis. Am. J. Physiol. 260 (Cell Physiol. 29): C658-C663, 1991). In the present study, we investigated the possible expression of fast Na+ channels and resultant fast Na+ current (I-Na(f)) using whole cell voltage clamp in cultured uterine leiomyosarcoma **cells** (SK-UT-1B), which are derived from human myometriura. The

expression of I-Na(f) was dependent on the concentration of fetal bovine serum (FBS) in the culture medium. The mean current densities of peak I-Na(f) in **cells** incubated with 0, 1, 5, and 10% FBS were (in pA/pF) 1.3 +- 0.5, 1.6 +- 0.9, 9.8 +- 2.4, and 9.8 +- 1.7, respectively. Two types of I-Na(f) were identified based on different time courses of current decay. Both types of current were equally tetrodotoxin sensitive (half-maximal inhibitory concentration apprx 50 nM) and had similar **electrical properties**. These characteristics are consistent with those in the pregnant myometrial **cells**, yet the current density in the sarcoma **cells** is much higher. These findings suggest that one or more factors in serum induce I-Na(f) in the uterine sarcoma **cells**, and this cell line could be a good model for the study of the fast Na+ channels in uterine smooth muscle.

L7 ANSWER 11 OF 17 BIOSIS COPYRIGHT 1999 BIOSIS
1994:479094 Document No.: PREV199497492094. Resting and action potentials of nonischemic and chronically ischemic human ventricular muscle. Mubagwa, Kanigula (1); Flameng, Willem; Carmeliet, Edward. (1) Cent. Exp. Surg. Anaesthesiol., 17 Minderbroedersstraat, Provisorium 1, B-3000 Leuven Belgium. Journal of Cardiovascular Electrophysiology, (1994) Vol. 5, No. 8, pp. 659-671. ISSN: 1045-3873. Language: English.
AB Membrane Potentials in Human Ventricle. Introduction: The effect of chronic ischemia on the **electrical properties** of human cardiac tissue is not well understood. Methods and Results: Membrane potentials were studied using microelectrode techniques in isolated human ventricular **tissues** obtained from nonischemic (n = 17) or chronically ischemic (n = 7) myocardium. In normal Tyrode's solution, resting potential (V-r) was lower in ischemic (-70.1 +- 2.12 mV) than in nonischemic muscles (-77.6 +- 0.93 mV; mean +- SEM; P lt 0.05). In high (K)-o (gt 10 mM) media, V-r was of similar magnitude in both types of tissue (in 21.6 mM (K)-o, V-r was -53.1 +- 2.24 mV in nonischemic and -49.6 +- 2.03 mV in ischemic preparations; n = 7 each; P gt 0.05). Lowering (K)-o caused persistent hyperpolarization in nonischemic muscles, but caused depolarization in chronically ischemic preparations (in 2.7 mM (K)-o, V-r was -84.9 +- 2.74 mV and -61.7 +- 7.72 mV, respectively; n = 7; P lt 0.05). Pinacidil (100 mu-M) normalized the response of chronically ischemic preparations to (K)-o. Action potentials (APs) from nonischemic **tissues** varied in shape and could show aberrations. Epinephrine (1.5 mu-M) and 4-aminopyridine (3 mM) increased the AP duration, while butanedione monoxime (20 mM) and tetrodotoxin (1 mu-M) shortened it. In chronically ischemic muscles, the AP was characterized by the absence of a plateau and the presence of a slow phase of final repolarization. Conclusion: The differential effect of low (K)-o on the resting membrane potential of nonischemic and chronically ischemic **tissues** suggests a change in the properties or the regulation of background K+ channels during chronic ischemia.

L7 ANSWER 12 OF 17 BIOSIS COPYRIGHT 1999 BIOSIS
1995:459612 Document No.: PREV199598473912. The measured **electrical properties** of normal and malignant human **tissues** from 50 to 900 MHz. Joines, William T. (1); Zhang, Yang; Li, Chenxing; Jirtle, Randy L.. (1) Dep. Elect. Eng., Duke Univ., Durham, NC 27708 USA. Medical Physics (Woodbury), (1994) Vol. 21, No. 4, pp. 547-550. ISSN: 0094-2405. Language: English.
AB The electrical conductivity and relative permittivity of malignant and normal human **tissues** were measured at frequencies from 50 to 900 MHz. The measurements were made between 23 and 25 degree C using a network

analyzer connected to a flat-ended coaxial probe that was pressed against the freshly excised tissue samples. The malignant **tissues** were of the following normal tissue origin: bladder, colon, kidney, liver, lung, lymph nodes, mammary gland, spleen, and testes. The normal **tissues** included: colon, kidney, liver, lung, mammary gland, and muscle. Normal tissue samples of bladder, lymph, spleen, and testes were not available. In general, at all frequencies tested, both conductivity and relative permittivity were greater in malignant tissue than in normal tissue of the same type. For **tissues** of the same type, the differences in **electrical properties** from normal to malignant were the least for kidney (about 6% and 4% average differences over the frequency range in permittivity and conductivity, respectively), and these differences were the greatest for mammary gland (about 233% and 577% average differences in permittivity and conductivity, respectively). To illustrate a potential use of these data in hyperthermia applications, frequency-selective heating of malignant tissue (modeled as a sphere) surrounded by host normal tissue is calculated from the measured **electrical properties** for certain **tissues**.

L7 ANSWER 13 OF 17 BIOSIS COPYRIGHT 1999 BIOSIS

1994:343602 Document No.: PREV199497356602. Voltage-dependent Ca-2+ influx in the epithelial cell line HT-29: Simultaneous use of intracellular Ca-2+ measurements and nystatin perforated patch-clamp technique. Leipziger, J. (1); Fischer, K.-G.; Greger, R.. (1) Physiologisches Inst., Albert-Ludwigs-Univ., Hermann-Herder-Strasse 7, 79104 Freiburg Germany. Pfluegers Archiv European Journal of Physiology, (1994) Vol. 426, No. 5, pp. 427-432. ISSN: 0031-6768. Language: English.

AB Indirect evidence has accumulated indicating a voltage dependence of the agonist-stimulated Ca-2+ influx into epithelial **cells**. Manoeuvres expected to depolarize the membrane voltage during agonist stimulation resulted in: (1) a decrease of the sustained phase of the adenosine triphosphate (ATP, 10-5 mol/l)-induced intracellular Ca-2+ transient, (2) a reduced fura-2 Mn-2+- quenching rate, and (3) prevention of the refilling of the agonist-sensitive store. To quantify the change in intracellular Ca-2+ as a function of membrane voltage, we measured simultaneously the intracellular Ca-2+ activity ((Ca-2+)-i) with fura-2 and the **electrical properties** using the nystatin perforated patch-clamp technique in single HT-29 **cells**. Ca-2+ influx was either stimulated by ATP (10-5 mol/l) or thapsigargin (TG, 10-8 mol/l). After (Ca-2+)-i reached the sustained plateau phase we clamped the membrane voltage in steps of 10 mV in either direction. A stepwise depolarization resulted in a stepwise reduction of (Ca-2+)-i. Similarly a stepwise hyperpolarization resulted in a stepwise increase of (Ca-2+)-i (ATP: 27.5 +- 10 nmol/l per 10 mV, n = 6; TG: 19 +- 7.9 nmol/l per 10 mV, n = 12). The summarized data show a linear relationship between the DELTA fluorescence ratio 340/380 nm change and the applied holding voltage. In unstimulated **cells** the same voltage-clamp protocol did not chance (Ca-2+)-i (n = 9). Under extracellular Ca-2+-free conditions (Ca-2+)-i remained unaltered when changing the membrane voltage. These data provide direct evidence that the Ca-2+ influx in epithelial **cells** is membrane voltage dependent. Our data indicate that small changes in membrane voltage lead to substantial changes in (Ca-2+)-i. This may be due either to a change of driving force for Ca-2+ into the cell, or may reflect voltage-dependent regulation of the respective Ca-2+ entry mechanism.

L7 ANSWER 14 OF 17 BIOSIS COPYRIGHT 1999 BIOSIS
1993:588201 Document No.: PREV199497007571. **Electrical properties** of Y-79 **cells**, a multipotent line of human retinoblastoma. Del Pilar Gomez, Maria (1); Waloga, Geraldine; Nasi, Enrico. (1) Dep. Physiol., Boston Univ. Sch. Med., 80 East Concord St., Boston, MA 02118 USA. Journal of Neurophysiology (Bethesda), (1993) Vol. 70, No. 4, pp. 1476-1486. ISSN: 0022-3077. Language: English.

L7 ANSWER 15 OF 17 BIOSIS COPYRIGHT 1999 BIOSIS
1993:317089 Document No.: PREV199396025439. Effects of human recombinant interleukin-1 on **electrical properties** of guinea pig ventricular **cells**. Li, Yun-Hua; Rozanski, George J. (1). (1) University Nebraska College Med., 600 South 42nd St., Omaha, NE 68189-4575
USA. Cardiovascular Research, (1993) Vol. 27, No. 3, pp. 525-530. ISSN: 0008-6363. Language: English.
AB Objective: To determine whether cytokines alter the **electrical properties** of heart **cells**, the effects of human recombinant interleukin-1-beta (IL-1) were examined in excised **tissues** and dissociated myocytes from guinea pig ventricles. Methods: In a first series of experiments, transmembrane potentials were recorded from isolated papillary muscles superfused with 1 ng cntdot ml-1 IL-1 in the absence and presence of blockers of archidonic acid metabolism. Secondly, to examine the ionic mechanisms underlying the response to IL-1, ventricular myocytes were dissociated from collagenase perfused hearts and studied using the whole cell configuration of the patch clamp technique under conditions designed to isolate the L-type Ca-2+ current (I-Ca). Results: In excised papillary muscles, IL-1 significantly prolonged action potential duration (measured at 90% repolarization) by 24.2(SEM 2.2) ms and effective refractory period by 22.9(2.3) ms (both p lt 0.001; n=44). Other measured variables were not affected. Treatment of muscles with cyclo-oxygenase inhibitors, indomethacin (1 times 10-5 M) or acetyl salicyclic acid (2 times 10-4 M), abolished the prolongation of action potenntial duration elicited by IL-1.
However, the effects of IL-1 were also blocked by the lipoxygenase inhibitor nordihydroguaiaretic acid (2 times 10-5 M) or by treating **tissues** with the leukotriene receptor blocker, ICI98615 (1 times 10-8 M). In isolated myocytes, 1 ng cntdot ml-1 IL-1 increased I-Ca density in 44 of 78 **cells** by 33.6(7.5)% (11.7(0.6) v 14.6(0.7) pA cntdot pF-1; p lt 0.001) during voltage steps from -40 to 0 mV. Conclusions: IL-1 modifies **electrical properties** of cardiac **cells** via lipid second messengers generated by cyclo-oxygenase and lipoxygenase pathways. Voltage clamp analyses suggest that these effects are mediated, at least in part, by changes in the conductance of calcium channels.

L7 ANSWER 16 OF 17 BIOSIS COPYRIGHT 1999 BIOSIS
1993:439856 Document No.: PREV199396094481. Variation in the **electrical properties** of cultured human proximal tubule **cells**. Tood, John H.; Sens, Mary Ann; Hazen-Martin, Debra J.; Bylander, John E.; Smythan, Brendan J.; Sens, Donald A. (1). (1) Dep. Pathol. and Lab. Med., Med. Univ. South Carolina, 171 Ashley Ave., Charleston, SC 29425 USA. In Vitro Cellular & Developmental Biology, (1993) Vol. 29A, No. 5, pp. 371-378. ISSN: 0883-8364. Language: English.
AB Monolayers of human proximal tubule (HPT) **cells**, when grown on permeable supports and mounted in Ussing chambers, spontaneously display a
transepithelial potential difference (PD), short-circuit current (Isc), and transepithelial specific resistance (R-T). These electrical parameters

were used to determine the degree of heterogeneity among independent isolates of human proximal tubule cell cultures. Seventeen independent isolates of **cells** were assessed, totaling 260 individual determinations of spontaneous **electrical properties**. On average, these cell monolayers displayed an apical-negative PD of 1.5 +- 0.1 mV, an Isc of 2.7 +- 0.2 mu-A/cm-2, and an R-T of 480 U 19 ohms times cm-2. Each independent cell isolate, however, displayed electrical values within a narrow range, in some cases allowing isolates to be distinguished from one another. The individual isolates were also assessed for Na-coupled glucose transport, Na+,K+-ATPase activity, cAMP stimulation by parathyroid hormone (PTH), forskolin stimulation of Isc, and ouabain inhibition. With the exception of a strong correlation between Na+,K+-ATPase activity and Isc, these parameters, in contrast to **electrical properties**, were found to be consistent and did not reveal distinctions among the isolates. HPT cell cultures seem to consistently retain important features of proximal tubule differentiation while maintaining the variability, as demonstrated by **electrical properties**, that might be expected of **cells** isolated from a random population.

L7 ANSWER 17 OF 17 EMBASE COPYRIGHT 1999 ELSEVIER SCI. B.V.
84188361 EMBASE [Postmortal changes in passive **electrical properties** of **tissues**]. POSTMORTALE VERANDERUNGEN PASSIVER ELEKTRISCHER GEWEBEPARAMETER. Hunger H.; Wunderlich G.; Muller W.D.; et al.. Institut fur Gerichtliche Medizin und Kriminalistik der Karl-Marx-Universitat, Leipzig, German Democratic Republic. KRIM. FORENS. WISS. NO. 53-54 (79-82) 1984.
CODEN: KRFWAG. Pub. Country: German Democratic Republic. Language: German.
AB Report on electric impulse conduction based upon which information on the passive electrical conduct of biological **tissues** is disclosed quite quickly. First studies have shown that this method can be used to describe postmortem changes in **tissues**. The significance of this method in establishing the time of death is stressed.

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L8          705 FILE CAPLUS
L9         1274 FILE BIOSIS
L10         425 FILE MEDLINE
L11         619 FILE EMBASE
L12         105 FILE WPIDS

TOTAL FOR ALL FILES
L13        3128 (ELECTRICAL OR VISIBLE) AND (MICROORGANISM OR VIRUS?) AND
(TISSU
                E OR CELLS)

=> s l13 and test?(l)(medicine or medicament)

L14           0 FILE CAPLUS
L15           0 FILE BIOSIS
L16           0 FILE MEDLINE
L17           1 FILE EMBASE
L18           0 FILE WPIDS

TOTAL FOR ALL FILES
L19           1 L13 AND TEST?(L)(MEDICINE OR MEDICAMENT)

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L19 ANSWER 1 OF 1 EMBASE COPYRIGHT 1999 ELSEVIER SCI. B.V.
94229470 EMBASE [Dr. Wangs Tube - Examination of a new technique in reproductive medicine]. DAS DR. WANGS TUBE - UNTERSUCHUNG EINER NEUEN TECHNIK ZUR KEIM-ELIMINIERENDEN SPERMAAUFBEREITUNG FUR DIE REPRODUKTIONSMEDIZIN. Riedel H.-H.; Sander K.; Lutticken R..
Frauenklinik,
Stadtisches Heinrich-Braun-Krankenh., Karl-Keil-Str. 35, 08012 Zwickau, Germany, Federal Republic of. ZENTRALBL. GYNAKOL. 116/7 (422-432) 1994.
ISSN: 0044-4197. CODEN: ZEGYAX. Pub. Country: Germany, Federal Republic of. Language: German. Summary Language: German; English.
AB A total of 30 ejaculates has been **tested** for ejaculate volume, spermatozoal concentration, motility, agglomeration, agglutination and contamination by **microorganisms**. After that the ejaculate has been washed twice and transferred in the Dr. Wangs Tube which was filled with medium before. After an incubation time of 90 minutes very quickly moving spermatozoan could be observed through the microscope in the upper part (C-D) of the Tube. After the Tube was cut by means of a special glasscutter the motility of the containing spermatozoans of part C-D has been determined again, followed by a second bacteriological examination of the so prepared ejaculate. The results of sperm preparation with the Dr. Wangs Tube regarding the sperm motility has been very good (85.7% of the sperm samples showed a motility rate of 90% or even more after treatment).
The bacteriological examination has been satisfactory: in 77.7% of the cases all existing sperm bacterias has been eliminated by preparation in the Dr. Wangs Tube. Among other **microorganisms** Escherichia coli, Proteus mirabilis and Staphylococcus aureus which are considered to be pathologic could be isolated from five of the ejaculates and have been removed after treatment with the Dr. Wangs Tube. The handling of the Tube was rather demanding and technically problematic. There has been caused glass-splinters by cutting the Tube which got **visible** while observing the ejaculate-medium-liquid through the microscope. Their sizes were nearly equivalent to the size of a sperms head or even bigger. If the so prepared ejaculate would be used for insemination and in-vitro fertilisation the very small splinters may destruct the success of the treatment and should be avoided or removed. The Dr. Wangs Tube offers a new modificated swim-up technique for sperm preparation and is able to produce a high quality, nearly sterile sperm sample. Because of the technical deficiency of the system, the high purchase and running costs and the very small output (sperm sample volume, number of spermatozoans) the Dr. Wangs Tube is not recommended for the reproductive **medicine** in its present shape.

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L20	0	FILE CAPLUS
L21	51	FILE BIOSIS
L22	0	FILE MEDLINE
L23	1	FILE EMBASE
L24	0	FILE WPIDS

TOTAL FOR ALL FILES
L25 52 L13 AND (DETECT? OR TEST?) AND (MEDICINE OR MEDICAMENT)

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L26 0 FILE CAPLUS
L27 2 FILE BIOSIS
L28 0 FILE MEDLINE
L29 0 FILE EMBASE
L30 0 FILE WPIDS

TOTAL FOR ALL FILES
L31 2 IMAG? AND L25

=> d 1-2 cbib abs;s medicine test device? and electrical measure?

L31 ANSWER 1 OF 2 BIOSIS COPYRIGHT 1999 BIOSIS
1997:253782 Document No.: PREV199799552985. Septic arthritis of lumbar facet joint: About 3 cases. Douvrin, F.; Callonnec, F.; Proust, F.; Janvresse, A.; Simonent, J.; Thiebot, J. (1). (1) Dep. Imagerie Medicale, CHU, Rouen F-76031 France. Journal of Neuroradiology, (1996) Vol. 23, No. 4, pp. 234-240. ISSN: 0150-9861. Language: French. Summary Language: French; English.
AB Septic arthritis of spinal apophyseal joint, seldom described, mainly concern the lumbar spine. We report three cases. Inflammatory lesions of the paravertebral soft **tissues** were associated in each case; an epidural abscess was present twice. Our three cases were due to Staphylococcus aureus. The initial clinical features were consistent with a spondylodiscitis. **Imaging** led to the correct diagnosis in all cases. According to our observations and several others of the literature:
facet joint lesions are **visible** too late on plain films. Bone scintigraphy is sensitive, but not specific. CT scan and MRI are the most contributive investigations. A pathologic aspect of the paravertebral soft
tissues is **visible** less than one week after the beginning of the symptoms on CT scan and MRI. Lesions of the facet joint are **detectable** as soon as the first week on MRI, and after 15 days of clinical course on CT scan. Epidural abscess, when present, is best shown by MRI as early as the first week. CT scan can guide percutaneous needle biopsies of the paravertebral abscesses or of the concerned facet joint.

L31 ANSWER 2 OF 2 BIOSIS COPYRIGHT 1999 BIOSIS
1994:80176 Document No.: PREV199497093176. Frequency and topographical distribution of CD68-positive macrophages and HIV-1 core proteins in HIV-associated brain lesions. Neuen-Jacob, E. (1); Arendt, G.; Wendtland, B.; Jacob, B.; Schneeweis, M.; Wechsler, W.. (1) Abt. Neuropathol., Heinrich-Heine-Universitaet, Postfach 101007, D-40001 Duesseldorf Germany.
Clinical Neuropathology, (1993) Vol. 12, No. 6, pp. 315-324. ISSN: 0722-5091. Language: English.
AB We report the neuropathological and immunohistochemical findings in the brains of 14 AIDS patients with HIV-related encephalopathy. Clinically, half of the patients presented with severe AIDS dementia complex including
advanced psychomotor retardation and behavioural dysfunction. These features correlated with striking cerebral atrophy and subcortical lesions
visible in CT and/or MRI scans. In 7 cases early signs of impaired memory and concentration and/or psychomotor slowing were apparent accompanied by subcortical lesions in MRI scans and normal CCTs. In order to investigate the topographical distribution of HIV-1-associated features, in every case **tissue** samples from the frontal, temporal, parietal, occipital cortex and subcortical white matter, the

hippocampus, basal ganglia, midbrain, Pons, medulla oblongata and cerebellum were studied. In all patients histological examination disclosed the typical cellular constituents of HIV encephalitis (n = 12) or leukoencephalopathy (n = 2). Antibodies against lymphocyte subsets, CD68 antigen, myelin basic protein and GFAP were used to characterize the phenotype of **cells** and to highlight the white matter gliosis. The distribution and degree of pathological features were analysed in a semiquantitative scale, based on the number of CD68-positive **cells** , and disclosed great interindividual differences concerning the affected brain regions which only in part correlated with the severity of the clinical picture. It is noteworthy, that the deep gray matter, in particular putamen and thalamus, was involved in every case, independent from the stage of the disease. In addition, quantity and topographical distribution of HIV-1 core protein p24 were studied by use of two monoclonal antibodies. It is noteworthy, that the number of immunoreactive multinucleated giant **cells** and microglial **cells** decreased gradually from the deep gray matter, especially putamen and thalamus, and deep white matter to corpus callosum, cerebellar white matter and subcortical cerebral white matter. The topographical predilection of the deep gray matter even in cases with early cognitive decline indicates that the basal ganglia are affected early in the course of the disease. This observation closely resembles the results of highly sensitive quantitative neuropsychological **tests** which disclosed slowing and impaired coordination of rapid extremity movements indicating basal ganglia lesions even in early stages of HIV dementia.

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TOTAL FOR ALL FILES
L37             0 MEDICINE TEST DEVICE? AND ELECTRICAL MEASURE?

=> s medicine test device?

L38             0 FILE CAPLUS
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L43             1 MEDICINE TEST DEVICE?

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or cell)

'CBIB' IS NOT A VALID FORMAT FOR FILE 'WPIDS'

The following are valid formats:

TRI   SAM   Short Information (Syn.: TRIAL,SAMPLE)
BIB         Bibliographic Data
BRIEFG.H    Brief Contents of Document with GI.H
BRIEFG      Brief Contents of Document with GI
BRIEF       Brief Contents of Document
IBRIEFG.H   Brief Contents of Document with GI.H, Indented Version
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PA     CS     Patent Assignee
PATS          Patent Number Group
PI     PN     Patent Information
PI.B   PN.B   Patent Information Basic
PIA           Patent Information Abbreviated
PLC           Plasdoc Codes
PLE           Enhanced Plasdoc Codes
PNC           Patent Number Count
PRAI   PRN    Priority Information
REP    RPN RE Reference Patent Information
RIN           Ring Index Number
TI            Title
TT            Title Terms
UP            Update Date
UPA           Update Date Plasdoc Code
UPAB          Update Date Abstract
UPB           Update Date Chemical Code
UPP           Update Date Patent
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L43  ANSWER 1 OF 1  WPIDS   COPYRIGHT 1999 DERWENT INFORMATION LTD
AN   86-088616 [14]   WPIDS
DNN  N86-064777
TI   Liquid medicines testing device - records corona discharge using
     photographic film and convex electrode.
DC   P82 P84 S03
PA   (KEMP-I) KEMP D J; (KNAP-I) KNAPP D
CYC  10
PI   DE 3434154  A  860327 (8614)*      12 pp
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         R: AT BE CH DE FR GB LI NL SE
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L49          0 VISIBLE PROPERTIES? AND (MICROORGANISM OR VIRUS?) AND (TISSUE
               OR CELL)

=> s electric?(5a)measure? and test and (tissue or cell) and (medicine or
medicament)

L50          0 FILE CAPLUS
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L52          0 FILE MEDLINE
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L55 9 ELECTRIC?(5A) MEASURE? AND TEST AND (TISSUE OR CELL) AND (MEDICI
NE OR MEDICAMENT)

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L55 ANSWER 1 OF 9 BIOSIS COPYRIGHT 1999 BIOSIS
1998:476238 Document No.: PREV199800476238. The place of electrogastrography in the diagnosis of gastroenterological functions. Pfaffenbach, B. (1); Adamek, R. J.; Lux, G. (1). (1) Medizinische Klinik 1, Staedtisches Klinikum, Gotenstr. 1, 42653 Solingen Germany. DMW (Deutsche Medizinische Wochenschrift), (July 10, 1998) Vol. 123, No. 28-29, pp. 855-860. ISSN: 0012-0472. Language: German. Summary Language: German; English.
AB Background and objective: Abnormalities of gastric myoelectric activity can be measured by electrogastrography (EGG). Such dysfunctions can be associated with disorders of gastric motility. It was the aim of this study to investigate the relationship between gastric electrical activity and motility in patients with dyspepsia due to gastrointestinal or extraintestinal disease. Patients and methods: 135 consecutive patients with dyspepsia (standardized score) were enrolled in this prospective study including patients with functional dyspepsia (FD) (n = 25), dyspepsia in diabetes mellitus type II (n = 27), hyperthyroidism (n=23), progressive systemic scleroderma (PSS) (n=20), chronic alcoholism (n = 20), and 20 patients with gastric lesions: gastric ulcer (n = 10) or gastric cancer (n = 10). The EGG measurements were performed over 60 min pre- and postprandially state after ingestion of a solid-liquid **test** meal (370 kcal). The following parameters were **measured**: dominant **electrical** frequency (DF), percentage of DF in the normal frequency range (2-4 cpm), bradygastria (< 2 cpm), tachygastria (4-10 cpm), dominant frequency instability coefficient (DFIC), and power ratio. The data were compared with results in 40 healthy persons. The gastric emptying was determined by the gastric retention of 99mTc colloid after 60 min (gamma camera). Results: Nearly 50% of FD patients had delayed gastric emptying (gastric retention after 60 min > 68%): they patients exhibited significantly more tachygastrias than those with normal gastric emptying ($P < 0.05$). Patients with diabetes mellitus type II, PSS and chronic alcoholism showed normal electrical activity, although gastric emptying was delayed in nearly 50%. The hyperthyroid patients had increased tachygastria without abnormal gastric motility. Gastric lesions did not produce pathological electrogastrograms. The dyspepsia score did not correlate with either EGG or radioscintigraphy in the various patient groups. Conclusions: Electrogastrography can detect tachygastrias, which are significantly increased in some patients with functional dyspepsia. Because of therapeutic consequences electrogastrography seems to be indicated in patients with functional dyspepsia.

L55 ANSWER 2 OF 9 BIOSIS COPYRIGHT 1999 BIOSIS
1998:394242 Document No.: PREV199800394242. Electropotential measurements as a new diagnostic modality for breast cancer. Cuzick, Jack (1); Holland, Roland; Barth, Volker; Davies, Richard; Faupel, Mark; Fentiman, Ian; Frischbier, H. J.; Lamarque, J. L.; Merson, Mirella; Sacchini, Virgilio; Vanel, Daniel; Veronesi, Umbeto. (1) Dep. Mathematics, Statistics, Epidemiol., Imperial Cancer Res. Fund, P.O. Box 123, 61 Lincoln's Inn

Fields, London WC2A 3PX UK. Lancet (North American Edition), (Aug. 1, 1998) Vol. 352, No. 9125, pp. 359-363. ISSN: 0099-5355. Language: English.

AB Background: Proliferative changes in breast epithelium are an intrinsic aspect in the development of breast cancer, and result in regions of epithelial electrical depolarisation within the breast parenchyma, which can extend to the skin surface. Diagnostic information might be obtained from a non-imaging and non-invasive **test** based on skin-surface electropotentials. Methods: In 661 women, scheduled for open biopsy at eight European centres, we studied whether **measurements** of breast **electrical** activity with surface sensors could distinguish benign from malignant breast disease. A depolarisation index was developed. Results: We found a highly significant trend of progressive electrical changes according to the proliferative characteristics of the biopsied **tissue**. Discriminatory information was obtained in both premenopausal and postmenopausal women, and the index was not related to age. The best **test** performances were or women with palpable lesions. The median index was 0.398 for nonproliferative benign lesions, 0.531 for proliferative benign lesions, and 0.644 for cancer (ductal carcinoma-in-situ and invasive). A specificity of 55% was obtained at 90% sensitivity for women with palpable lesions when a discriminant based on age and the depolarisation index was used. Interpretation: This new modality may have diagnostic value, especially in reducing the number of unnecessary diagnostic **tests** among women with inconclusive findings on physical examination. Understanding and control of the biological variability of these electrical phenomena will be important in the improvement of this **test**. Studies in populations with a lower cancer prevalence are needed to assess further the diagnostic value of this approach.

L55 ANSWER 3 OF 9 BIOSIS COPYRIGHT 1999 BIOSIS

1997:342057 Document No.: PREV199799641260. **Electrical** impedance **measurements** of root canal length. Meredith, N. (1); Gulabivala, K.. (1) Dep. Oral Dental Sci., Bristol Dental Hosp., Lower Maudlin Street, Bristol BS1 2LY UK. Endodontics & Dental Traumatology, (1997) Vol. 13, No. 3, pp. 126-131. ISSN: 0109-2502. Language: English.

AB Electronic methods are now widely used during endodontic treatment for the assessment of root canal length. These commonly **measure** the **electrical** resistance or impedance between the root canal and the buccal mucosa. A number of studies have been undertaken to determine the accuracy of commercially available instruments. The aims of this investigation were to determine the electrical impedance characteristics of the root canal and periapical **tissues** in vivo; measure the changes relative to the distance of an endodontic instrument from the apical constriction and propose an equivalent circuit modelling the periapical **tissues**. The length of the root canals of 20 previously untreated teeth were determined using radiographic and electronic methods. Minimal canal preparation was carried out and measurements were made with a size 10 K-Flex file. A microprocessor-controlled LCR analyser was used to **measure** the **electrical** impedance characteristics of each root canal. The instrument measured the series and parallel resistive (R-S, R-P) and capacitance (C-S, C-P) component of the **tissues** at two **test** frequencies, 100 Hz and 1 kHz. Measurements were made for each root canal when the diagnostic file was placed at the apical constriction and repeated when the file was withdrawn to -0.5, -1.0, -1.5,

-2.0 and -5.0 mm from the foramen. Readings were taken for each canal after the canal had been dried with paper points, and flooded first with deionised water and then with sodium hypochlorite. The root canals were then prepared, cleaned and obturated using standard endodontic procedures.

The LCR analyser selected the series resistance component as the major measurement parameter. There was a clear increase in series resistance (R-S) with increasing distance from the radiographic apex for dry canals and those containing deionised water and sodium hypochlorite. The mean resistance for dry canals was markedly higher than for those containing fluid, ranging from 22.19 k-OMEGA to 92.07 k-OMEGA in comparison with 9.32 k-OMEGA to 12.10 k-OMEGA for deionised water and from 7.46 k-OMEGA to 8.92 k-OMEGA for canals containing sodium hypochlorite. There was a marked change in the series and parallel resistive component with distance from the apex, suggesting a complex relationship between the impedance of the smear layer and bulk dentine. The impedance characteristics of a root canal were a complex electrical network comprising resistive and capacitive series and parallel elements.

L55 ANSWER 4 OF 9 BIOSIS COPYRIGHT 1999 BIOSIS

1996:505878 Document No.: PREV199699228234. Effect of progressive systemic sclerosis on antral myoelectrical activity and gastric emptying. Pfaffenbach, Boris (1); Adamek, R. J.; Hagemann, D.; Busch, S.; Hoffmann, K.; Altmeyer, P.; Schaffstein, J.; Wegener, M.. (1) Dep. Med., Ruhr-Univ. Bochum, St. Josef-Hosp., Gudrunstr. 56, 44791 Bochum Germany. Zeitschrift fuer Gastroenterologie, (1996) Vol. 34, No. 9, pp. 517-521. ISSN: 0044-2771. Language: English. Summary Language: English; German.

AB In patients with progressive systemic sclerosis (PSS) suffering from chronic dyspepsia the stomach may be affected by this disease. The objective of this study was to investigate both antral myoelectrical activity and gastric emptying in PSS patients. Electrogastrography (EGG) was performed in 17 PSS patients (16 female, one male, median age 58 years, range 32-74 years) with chronic dyspepsia. After an overnight fast during one hour in the fasting and one hour in the fed state after ingestion of a liquid-solid **test** meal (370 kcal; liquid phase labeled with 0,5 mCi 99mTc-colloid) antral **electrical** activity was **measured** by one pair of electrodes sonographically placed on the skin overlying the gastric antrum. Several EGG parameters including dominant frequency (DF), percentages of DF in the normal range (2-4 cycles per minute (cpm)), bradygastria (lt 2 cpm) and tachygastria (4-10 cpm), dominant frequency instability coefficient (DFIC), and postprandial to preprandial power ratio (PR) were calculated. The data were correlated to results obtained in 20 age- and gender-matched healthy subjects. In addition, the data were compared to gastric retention of the radionuclide at 60 min measured by simultaneous scintigraphy The PSS patients did not reveal electrical disturbances. They even exhibited a significant postprandial decrease in DFIC, bradygastria, and tachygastria (ns) compared to healthy subjects. Over 50% of the PSS patients showed a delayed gastric emptying. However, EGG did not correlate to radioscintigraphy significantly. Our results reflect an absent relationship between antral myoelectrical activity in EGG and gastric emptying. Therefore, electrogastrography is unsuitable to assess gastric involvement in PSS.

L55 ANSWER 5 OF 9 BIOSIS COPYRIGHT 1999 BIOSIS

1996:227434 Document No.: PREV199698783563. Electrovasography in normal and vasectomized men before and after vasectomy reversal. Shafik, A.. 2 Talaat

Harb St., Cairo Egypt. International Journal of Andrology, (1996) Vol. 19,
No. 1, pp. 33-38. ISSN: 0105-6263. Language: English.

AB The electrical pattern of the vas deferens, or electrovasogram (EVG), was studied in 22 healthy volunteers, 20 vasectomy subjects and 18 individuals after vasectomy reversal. Their mean ages were 38.8 +- 7.3, 44.3 +- 7.9 and 58.6 +- 6.6 years, respectively. Two electrodes were applied to the posterior aspect of the upper part of the scrotum. During the operation of vasectomy reversal, an electrode was applied directly to each of the two vasal segments before and immediately after vasovasostomy. The **electrical** activity and intravasal pressure were **measured**. In normal subjects, slow waves or pacesetter potentials (PP) were recorded. They had identical frequency and a regular rhythm from the two electrodes and were consistent in the individual subject on all **test** days. PP were followed randomly by bursts of action potentials (AP). In vasectomized subjects, PP from the proximal vasal segment exhibited an irregular rhythm (vasoarrhythmia). During operation for vasectomy reversal, the proximal vasal segment recorded vasoarrhythmia whereas the distal segment revealed a silent EVG. Intravasal pressure was normal (p gt 0.05) in the distal segment but high (p lt 0.05) in the proximal segment. EVG performed 1-6 years after vasectomy reversal showed a normal pattern in four subjects and diminished frequency and amplitude in three. These seven subjects had impregnated their wives and had an obstructive interval of lt 3 years. The 11 subjects who did not produce a pregnancy had a vasoarrhythmic EVG and an obstructive interval of gt 3 years. In conclusion, an EVG could be identified for normal subjects. Vasectomy resulted in a vasoarrhythmic EVG pattern which proved to be correctable by vasectomy reversal if the obstructive interval was short.

L55 ANSWER 6 OF 9 BIOSIS COPYRIGHT 1999 BIOSIS

1995:299424 Document No.: PREV199598313724. **Electrical** impedance **measured** to five skin depths in mild irritant dermatitis induced by sodium lauryl sulphate. Nicander, I.; Ollmar, S. (1); Rozell, B. Lundh; Eek, A.; Emtestam, L.. (1) Cent. Dent. Technol. Biomaterials, Karolinska Inst., NOVUM, PO Box 4064, S-14104 Huddinge Sweden. British Journal of Dermatology, (1995) Vol. 132, No. 5, pp. 718-724. ISSN: 0007-0963. Language: English.

AB The non-invasive electrical impedance technique used in this study reflects structural changes in a **tissue**, and provides an estimate of the level of oedema by a simple impedance index. Sodium lauryl sulphate (SLS), dissolved in water at concentrations of 0.1, 0.5 and 2.0%, was applied for 24 h in 12 mm Finn chambers on both volar forearms of 12 healthy volunteers. An unoccluded area was used as a reference site. Readings from all sites were taken before the application of the irritant, and 24 h after its removal. After the last reading, a 3-mm punch biopsy was taken from each **test** site for histological examination. The results obtained from **electrical** impedance **measurements** at five different skin depths were correlated with those obtained from histological examination, visual scoring and transepidermal water loss (TEWL). For all of the methods used the responses were proportional to the concentration of the irritant. Statistically significant changes of electrical impedance were found for all depths and concentrations, except for 0.1% SLS at the most superficial depth. The histological changes were

focused in the epidermis, and mainly consisted of oedema. Alterations in the thickness of the epidermis due to oedema were used as a quantitative parameter for correlation with the assessment of irritation using the electrical impedance technique. For the detection of irritant reactions, TEWL and electrical impedance are more sensitive than visual scoring, and selection of the optimum depth penetration further increases the sensitivity of the **electrical** impedance **measurement**.

L55 ANSWER 7 OF 9 BIOSIS COPYRIGHT 1999 BIOSIS
1995:273197 Document No.: PREV199598287497. Correlation between cognitive brain function and electrical brain activity in dementia of Alzheimer type. Dierks, T. (1); Froelich, L.; Ihl, R.; Maurer, K.. (1) Dep. Psychiatry I, University Frankfurt/Main, Heinrich-Hoffmann-Strasse 10, D-60528 Frankfurt/Main Germany. Journal of Neural Transmission General Section, (1995) Vol. 99, No. 1-3, pp. 55-62. Language: English.
AB Psychometric **tests** which assess cognitive brain function in dementia disorders are partly prone to artifacts, e.g., the experience of the investigator and the cooperation of the patient influences the results. An objective way to assess the degree of cognitive disturbance could be to **measure** neuronal activity represented by the **electrical** brain activity. The aim of the present study was to investigate how well cognitive function in dementia assessed by psychometric **tests** correlates with electrical brain activity (EEG). Multichannel EEG data was reduced into 3-D intracerebral equivalent dipole EEG generators allowing a more convenient statistical data management and valid physiological data interpretation. 35 patients suffering from dementia of Alzheimer type were investigated. An increase of dipole strength in the slow frequency bands, a more anterior equivalent dipole of alpha- and beta-activity, and a slowing of the EEG with increasing cognitive deterioration could be demonstrated. The results support the hypothesis that the amount of disturbance of cognitive function in dementia can be assessed by measuring the electrical activity of the brain.

L55 ANSWER 8 OF 9 BIOSIS COPYRIGHT 1999 BIOSIS
1995:225297 Document No.: PREV199598239597. Human intestinal cryptosporidiosis: Secretory diarrhea and enterotoxic activity in Caco-2 **cells**. Guarino, Alfredo (1); Canani, Roberto Berni; Casola, Antonella; Pozio, Edoardo; Russo, Rosario; Bruzzese, Eugenia; Fontana, Massimo; Rubino, Armido. (1) Dep. Pediatr., Univ. Federico II of Naples, Via S. Pansini, 580131 Naples Italy. Journal of Infectious Diseases, (1995) Vol. 171, No. 4, pp. 976-983. ISSN: 0022-1899. Language: English.
AB A **cell** line model to detect enterotoxic effect was used to **test** fecal specimens of patients with enteric cryptosporidiosis. Fecal samples were obtained from 11 patients with Cryptosporidium diarrhea, and osmotic gap was determined. Caco-2 **cell** monolayers grown on filters were mounted in Ussing chambers, and **electrical** parameters were **measured** before and after the addition of fecal supernatant. A significant increase in short-circuit current was seen in 9 of 11 specimens. The enterotoxic effect was time- and dose-dependent, saturable, and Cl-- and Ca-2+-dependent. Fecal osmotic gap was consistent with secretory diarrhea in the 9 enterotoxin-positive but not in the 2 enterotoxin-negative samples. In conclusion, a **cell** line model for studying the pathophysiology of enteric cryptosporidiosis was established. Enterotoxic activity was observed in most patients with enteric cryptosporidiosis and was strictly associated with secretory diarrhea.

L55 ANSWER 9 OF 9 BIOSIS COPYRIGHT 1999 BIOSIS
1993:317895 Document No.: PREV199396026245. In vitro concentrative accumulation of D-xylose by jejunum from horses and rabbits. Freeman, David E.. Dep. Clin. Stud., New Bolton Cent., Sch. Vet. Med., Univ. Pa., 382 West Street Rd., Kennett Square, PA 19348 USA. American Journal of Veterinary Research, (1993) Vol. 54, No. 6, pp. 965-969. ISSN: 0002-9645.
Language: English.

AB Accumulation of D-xylose by jejunal mucosa from healthy horses and rabbits was studied in vitro. When **tissue** sheets were incubated with 1 mM D-xylose for 60 minutes, mucosa from horses and rabbits accumulated D-xylose against a concentration gradient. There was no accumulation when equine specimens were incubated with 5 mM D-xylose. By comparison, equine jejunum accumulated D-glucose against a concentration gradient when incubated in 5 mM D-glucose. In equine and rabbit jejunum, 13.3 +- 7.0% and 36 +- 11.0%, respectively, of accumulated D-xylose was phosphorylated when sheets were incubated in 1 mM D-xylose. Short-circuit current and potential difference were lower in equine jejunum, than in rabbit jejunum, possibly because of differences in **tissue** thickness. None of the transmucosal **electrical measurements** increased after addition of D-xylose (1 mM and 5 mM or D-glucose (5 mM). The active transport system for D-xylose has a low affinity for this sugar and becomes saturated at low intraluminal concentrations. Therefore, abnormal D-xylose absorption **test** results in horses are more likely caused by abnormalities in mucosal surface area and mucosal permeability than by abnormalities of nutrient carbohydrate absorption.